2016 Spring Electrofishing (SEI and SEII) Summary Report

White Lake (WBIC 272900)

Waupaca County

Introduction and Survey Objectives

In 2016, the Department of Natural Resources conducted two different one night boomshocking surveys of White Lake in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey are to characterize species composition, relative abundance, and size structure. The following report is a brief summary of the activities conducted, general status of fish populations and future management options.

Acres: 1064 Shoreline Miles: 5.94 Maximum Depth (feet): 11
Lake Type: Shallow Lowland Public Access: 3 Boat Launches
Regulations: 25 Panfish may be kept, but only 10 of any one species, all other species follow statewide default regulations

Survey Information							
Site location	Survey Date	Water Temp. (F)	Target Species	Total Miles Shocked	No. of Stations	Gear	Dippers
White Lake	3/29/2016 and 5/19/2016	50 and 66	All	8.11	11	Boomshocker	2

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Survey Method

- White Lake was sampled according to spring electrofishing (SEI and SEII) protocols as outlined in the statewide lake assessment plan. The primary objective for this sampling period is to count and measure adult bass and panfish. Other gamefish may be sampled but are considered by-catch as part of this survey.
- The entire shoreline was sampled with a boomshocker. All fish captured were identified to species and measured for length. A subsample of fish were weighed and age structures collected for age and growth analysis.
- Fish metrics used to describe fish populations include proportional stock density, catch per effort, length frequency distribution, and mean age at length.

Fish Metric Descriptions
PSD, CPUE, LFD and Growth

Proportional Stock Density (PSD) is an index used to describe size structure of fish. It is calculated by dividing he number of quality size fish by the number of stock size fish for a given species. PSD values in the 30 to 50 percent range generally describe a balanced fish population.

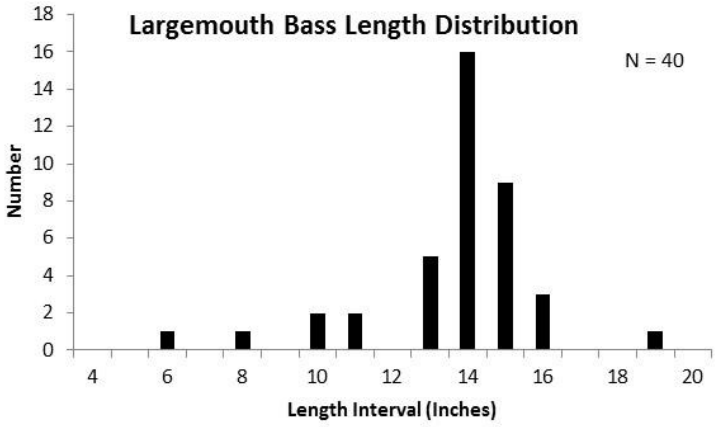
Catch per unit effort (CPUE) is an index used to measure fish population relative abundance which simply refers to the number of fish captured per unit of distance or time. For lake surveys we typically quantify CPUE by the number and size of fish per mile of shoreline. CPUE indexes are compared to statewide data by percentiles. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state.

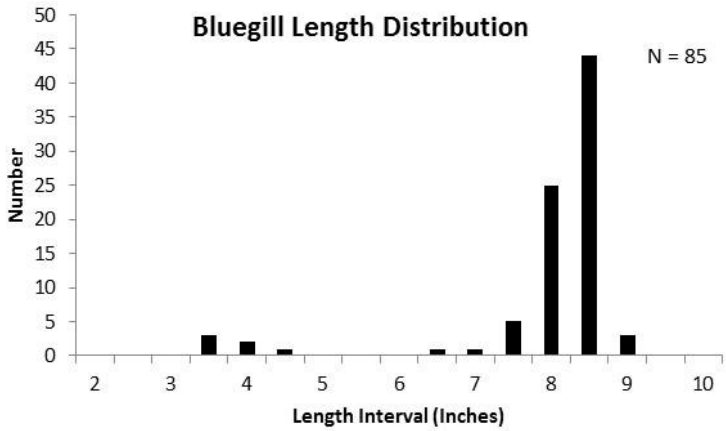
Length frequency distribution (LFD) is a graphical representation of the percentage of fish captured by one inch size intervals. Smaller fish (or younger age classes) may not always be represented in the length frequency due to different habitat usage or gear sampling limitations.

Mean Age at Length is an index used to assess fish growth. Growth structures (otoliths, spines, or scales) are collected from a specified length bin of interest (e.g. 7.0-7.5 inches for bluegill). Mean age is compared to statewide data by percentile with growth characterized by the following benchmarks: slow (<33rd percentile); moderate (33rd to 66th percentile); and fast (>66th percentile).

Size Structure Metrics									
Species	Total	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock No	Quality No	PSD	Percentile Rank	Size Rating
BLUEGILL	85	8.1	3.5 - 9.4	3.0 and 6.0	85	79	93%	98th	High
LARGEMOUTH BASS	40	14.0	6.1 - 19.8	8.0 and 12.0	39	34	87%	89th	High
NORTHERN PIKE	35	16.2	12.1 - 20.6	14.0 and 21.0	33	0	0%	-	Low
PUMPKINSEED	4	8.1	8.0 - 8.3	3.0 and 6.0	-	-	-	-	-
WALLEYE	26	16.3	8.3 - 21.3	10.0 and 15.0	24	15	63%	71st	Moderate
YELLOW PERCH	6	3.6	2.6 - 5.1	5.0 and 8.0	-	-	-	-	-

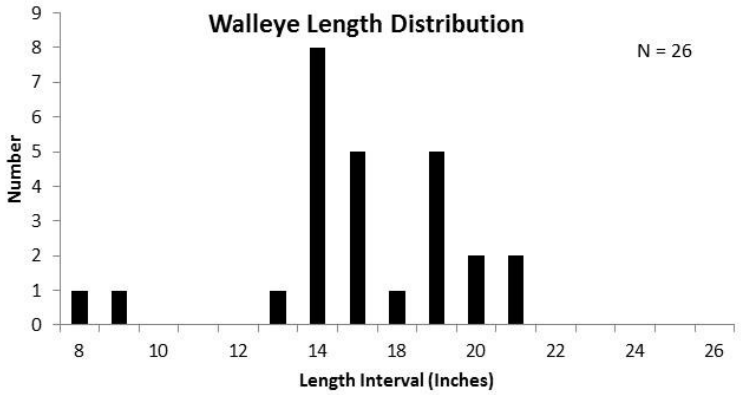
Abundance Metrics							
Species	CPUE Total (no per mile)	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Percentile Rank	Abundance Rating
BLUEGILL	57.3	39th	Moderate	≥ 7.0	52.7	93rd	High
PUMPKINSEED	2.7	27th	Low	≥ 7.0	2.7	83rd	Moderate -
WALLEYE	3.2	27th	Low	≥ 18.0	1.2	61st	Moderate
YELLOW PERCH	4.0	32nd	Moderate - Low	≥ 8.0	-	-	Low
LARGEMOUTH BASS	4.9	27	Low	≥14.0	3.6	58th	Moderate
NORTHERN PIKE	4.4	81st	Moderate - High	≥ 26.0	0.0	-	Low





Summary

- A total of 205 fish in 9 species were collected during our surveys. The most frequently encountered and common species were bluegill (86), largemouth bass (40), northern pike (36), and walleye (26).
- Common carp, a non-native species, was found in our surveys. Low numbers were sampled during fyke netting and electrofishing surveys.
- Other species sampled in low abundance included brown bullhead (3), common carp (3), pumpkinseed (4), yellow bullhead (1), and yellow perch (6).
- Largemouth bass was the dominant gamefish captured in our survey. Size structure metrics were found at high levels, while abundance metrics were low compared to statewide data. Largest bass sampled was 19.8 inches and 73% of catch were greater than 14.0 inches. Growth metrics indicated moderate to fast growth for quality size bass.
- Thirty five northern pike were sampled. Fyke netting would be the more appropriate sampling technique to assess this population.
- Twenty six walleyes were captured in a variety of sizes ranging from 12.1 - 20.6 inches. It is likely these fish are most likely from annual stocking by the area sportsmen's club.
- Panfish populations were mainly comprised of bluegill, pumpkinseed. and yellow perch. Bluegill were found at moderate density and showed above average size structure with 93% of our catch greater than 6.0 inches and 92% greater than 7.0 inches. Bluegill growth was fast when compared to statewide data. Pumpkinseed and yellow perch were found at low densities but yellow perch were comprised mainly of small fish (<6.0 inches) in the electrofishing surveys. Pumpkinseeds were found up to 8.3 inches.



Management Options

This survey was primarily intended to assess largemouth bass and sunfish populations. Other species are captured but different survey techniques are more appropriate to assess their population metrics. Therefore, management recommendations are focused on bass and panfish.

Largemouth Bass

- Management Objective: Increase largemouth CPUE of > 14.0 inch bass to 5 - 10 per mile and monitor recruitment. Currently we are not observing much for younger year classes of largemouth bass, we will continue to monitor year class strength in the next survey rotation.
- Management Action: None at this time.

Panfish

- Panfish size structure was found at optimal levels. The experimental panfish regulation put in place in 2016 should help to continue this.
- Management Objective: Maintain bluegill size structure and increase relative abundance levels. Lack of younger year classes of bluegill is a concern, monitoring will continue in order to make future management recommendations.
- Management Action: Panfish regulation of 25 panfish may be kept but only 10 of any one species is currently in place to protect the panfish population. Walleye stocking (large finglering at 2/acre) has been occurring over the years. High predators numbers help to keep abundance levels down in regards to panfish and increase growth rates. With the lack of panfish and bass recruitment in White Lake it is recommended to suspend predator stocking for the time being.

Other Management Objectives:

- Currently, White Lake is on an 4 year sampling rotation with the next survey scheduled for 2020. In addition to the standard SEII electrofishing survey we also conduct a spring netting survey to assess adult walleye, and northern pike populations.